

## ABSTRACT OF THE DISCLOSURE

The invention discloses a method for calculating constrained paths for a transmission network. The method has the capability of automatic calculation of the shortest paths satisfying the SDH/SONET protection requirement, and can effectively reduce repeat computation times. The method comprises the steps of: collecting attribute information of the link to which each node is connected and obtaining the number of the protect entity to which the link belongs; flooding the collected information to other nodes according to a protocol; combining each node according to the numbers of the protection entities to which each link respectively belongs and forming the topology structure of each protection entity of whole network and related link attribute information; and calculating constrained paths for the transmission network. Since the protection topology is pre-calculated in this method, the repeat computation times can be effectively reduced and the constrained paths can be calculated in real time.